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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,304	05/11/2001	Robert J. Bernardi	18864-04962US	7812

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EXAMINER	
GRAHAM, ANDREW R	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 09/854,304	**Applicant(s)** BERNARDI ET AL.	
	Examiner Andrew Graham	**Art Unit** 2644	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 11 May 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: _____.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached page(s).
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____
13. ☐ Other: _____.

AG
Andrew Graham
571-272-7517

Response to Remarks

Applicant's arguments filed 5/24/05 have been fully considered but they are not persuasive.

On page 3, lines 16-18, the applicant has stated, "Andrea not only does not teach but actually teaches away from any positioning of the microphone that fails to achieve proper or adequate noise cancellation". First, the examiner respectfully notes that the claims, as currently presented, do not provide an explicit correlation between "positioned differently than intended" and the state presented in the above citation, a "positioning of the microphone that fails to achieve proper or adequate noise cancellation". In other words, a positioning "differently than intended", which is the language presented in Claim 1, may yet perform "adequate noise cancellation", such as in the case where the microphone is preferably aligned (with microphone 12 receiving speech and noise and the second microphone 14 essentially receiving background noise, per col. 14, lines 23-29 of Andrea), but yet the resulting signal is of insufficient amplitude, such as when the microphone is too far away from a users mouth, per col. 3, lines 33-43 of Carlson. Second, Andrea does not disclose any microphone positioning that necessarily will provide inadequate or adversely affected operation. Situations where "the second microphone 14 receives both speech and background noise" are taught as resulting in a performance that "may" be adversely affected or "may" not adequately cancel the background noise, per col. 14, lines 36 and 47 of Andrea. Both of these results are presented as conditional, not

absolute. Such situations do not mandate that the system is incapable of canceling noise, nor does Andrea teach that such situations render the system incapable of providing an output signal. Clearly, having the first microphone 12 receive speech and noise and the second microphone 14 essentially receive background noise is preferred, while the other input configurations result in a non-preferred output signal. However, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments, per MPEP 2123. Finally, the physical implications of "differently than intended" must be considered. In a situation wherein the second microphone receives speech and background noise, so far as it pertains to a positioning "differently than intended", Andrea teaches that "a portion or all of the speech may be cancelled" (col. 14, lines 60-64). In terms of the resulting electrical signal, the amplitude of the signal would have decreased as a result of being partially or completely cancelled. Electrically, this same characteristic - a signal with a comparably decreased amplitude - is used by the thresholds established by Carlson to detect a mispositioned microphone (threshold 'a', col. 3, lines 35-38). Accordingly, such a signal in such a context would have been applicable to the threshold circuitry of Carlson. This response also applies and provides contrast to the applicant's characterization of Andrea on page 4, lines 11-23, wherein it is again reiterated that adverse affects are not taught by Andrea as being intrinsic for a

modified input signal, nor are such adverse results disclosed as preventing noise cancellation.

On page 4, lines 6-10, the applicant has stated, "As such the "intended" positioning should be read to include not only angles in the stated preferred range but also angles that are not substantially outside of the preferred range. Thus, positioning that is different from intended should be read to include angles that are substantially outside of the stated preferred range, in which range the microphones generally do not operate satisfactorily". The examiner respectfully disagrees. The pertinent claim language recites a position "differently from intended" or "unintended mispositioning" in each of the independent claims. An 'intention' is a generally abstract term that comprises a broad, reasonable interpretation in regards to its physical implication for a system. As it pertains to the teachings of Andrea, Andrea discloses that having the first microphone 12 receive speech and noise and the second microphone 14 essentially receive background noise is "preferred" (col. 14, lines 20-29). Other microphone arrangements in which the second microphone 14 receives speech and background noise are denoted as possibly operating "satisfactorily". The context of the teachings suggests that "preferable" input signal arrangement is of a higher quality than one that may or possibly provide "satisfactory" operation. Accordingly, the relationship presented in the final office action is one that falls within the boundaries of the broadest, reasonable interpretation of presented claim language. While the applicant's understanding of

how an "'intended' positioning should be read" may also be valid or fall within the broadest reasonable interpretation, it does not preclude the validity of the interpretation cited in the final office action.

On page 4, lines 29-30 and page 5, lines 1-2, the applicant has stated, "noise canceling microphones of Andrea could only be used by Carlson separately and distinctly, mutually exclusively, from the use of the first microphone in determining whether the first microphone is correctly positioned". The examiner respectfully disagrees. In both microphone arrangements, a single signal representing the input voice signal is established (output of pre-amplifier (22), col. 6, lines 7-8 of Carlson as well as amplifier 1940, Figure 28; output over pre-amplifier(16), col. 15, lines 18-25 and 43-46 of Andrea). The signal of Andrea, however, is, when the microphones are employed in a directional matter, reduced in terms of content from an undesired direction, such as a background source, which provides motivation for at least using a second microphone with the single microphone of Carlson, along with the necessary circuitry for combining the two microphone outputs to a single signal (col. 12, lines 62-66 of Andrea). Andrea also teaches, however, that a two microphone arrangement enables two different modes of operation to be obtained, one of which utilizes only one of the two microphones in the system (col. lines 47-55). As such, the inclusion of the second microphone of Andrea would not have altogether eliminated the initial, single microphone capability of the microphone of Carlson, but rather

improved the overall operation of the device by including a noise-canceling mode. This response also applies to the applicant's remarks presented on page 7, lines 1-7.

On page 5, lines 3-7, the applicant has stated, "Thus, even if the noise canceling microphones of Andrea were incorporated into the apparatus of Carlson, such combination would not read on the position estimation circuit producing the error signal ... from the audio signals from the first and second microphones as generally recited in the claims". The examiner respectfully disagrees. Substituting the microphones (12,14) and preamplifier (16) of Andrea for the microphone and pre-amplifier (22) of Carlson would have provided an input to the threshold circuitry (24,25,61) of Carlson based on either an omnidirectional microphone pickup or a noise cancelled microphone pickup. The thresholds of Carlson are at least equated to proper spacing between the microphone pickup and a user's head (col. 3, lines 34-43). The outputs of the threshold circuits indicate proper or improper positioning (col. 6, lines 29-42 and 54-59; col. 7, lines 7-11). As such, the threshold circuitry (24,25,61) of Andrea in use with the two microphone input (12,14) of Andrea teaches "the position estimation circuit producing the error signal from first and second audio signals" as generally recited in the claims. It is further noted that the switch (1910) of Andrea may be considered part of the "position estimation circuit", such that, regardless of the open or closed nature of the switch, two microphone inputs are provided to the circuit (col. 33, lines 58-64; Figure 28 of Andrea).

On page 5, lines 13-16, the applicant has stated, "Thus, the talk-thru mode of Andrea, either alone or in combination with Carlson would not read on the elements as generally recited in the claims in which both microphones receive and transducer acoustic signals into audio signals, the position estimation circuit using the audio signals from both microphones to generate the error signal". The examiner respectfully submits, however, that talk-thru mode does not prevent both microphones from transducing an acoustic signal, and that, as noted above, the switch (1910, Figure 28) of Andrea may be considered part of a "position estimating circuit", such that signals from the microphone are applied to the "position estimating circuit", regardless of the mode. It is further noted that the relevant language in Claims 1 and 19 regarding the two inputs and the error signal, "produce therefrom" does not clearly specify nor mandate a particular use of the two inputs in forming the error signal. Regardless, at least the noise canceling mode meets the presented claim language.

On page 5, lines 18-20, the applicant has stated that the talk thru mode of Andrea with the teachings of Carlson fails to read on, "a controller that uses the error signal to compensate for the mis-positioning of the acoustic pick-up device by providing audio signals from the first and/or second microphones to the output". The examiner respectfully notes however, that the references of Carlson and Andrea were not relied upon in the previous or present action for teaching such a controller. Andrea discloses that the noise canceling or

omnidirectional operation modes may be connected through switches (1910,1925,1920; col. 33, lines 63-67; col. 34, lines 1-2). Ruegg discloses a system for switching between a single and a combined microphone input source, wherein the switching is performed automatically based on a comparison of an input signal and a threshold (col. 3, lines 14-40). The teachings of Ruegg in combination with Carlson and Andrea, rather than Carlson and Andrea alone, are relied upon for teaching such a controller. The motivation behind using the switch control circuitry of Ruegg would have been the capability of automatically determining the presence of a desired sound source in a desired direction, resulting in the appropriate signal processing.

On page 5, lines 28-29, the applicant has stated, "Ruegg alternately utilizes only one of the two microphones at any given time". The examiner respectfully notes, however, that the results of the switching are analogous between the systems of Ruegg and Andrea in terms of the sound field represented in the output signal. Alternately stated, the switches in both Andrea and Ruegg have one position that corresponds to an omnidirectional signal and one position that corresponds to a directional signal. The directional microphone of Ruegg receives sound from a predetermined direction, not the entire background, as is represented in the output of the noise cancelled microphone signal of Andrea (col. 1, lines 16-21 and 26-32 of Carlson in comparison with col. 7, lines 4-8 and 21-29 of Andrea). This response also applies to the applicant's arguments presented on page 6, lines 26-29.

On page 6, lines 18-20, the applicant has stated, "the control signal generated by Ruegg estimates whether the user is in a conversation with another person or in a general background of sounds, such as being in traffic, and is not an error signal that estimates the device being mispositioned". The examiner respectfully disagrees. As generally noted above, the state of being "mispositioned" must be considered in terms of its physical implications for the system. As acknowledged by the applicant on page 6, lines 13-15, the system of Ruegg controls a switch depending on an amplitude received from the microphones (col. 3, lines 14-40). As also noted by the applicant, the directional microphone (12) aligns the input sound field with the line of sight for conversing with another person (col. 1, lines 14-23). The switching back to the microphone 11 occurs when a signal is absent from an amplifier output (col. 3, lines 35-40). This absence of a signal does not, however, mean that a conversation is not taking place. Rather, the configuration allows for a signal to be received by omnidirectional microphone (11), but not by the directional microphone (12) because of the directionality of the sound field received by the microphone (12). In such a context enabled by the system of Ruegg, the signal that affects switching back would have represented an error or mispositioning with respect to the purpose of the directional microphone for receiving conversation acoustic signals. Also, the directional microphone (12) is not used when the amplitudes received by either microphones (11,12) fail to surpass established thresholds. Carlson clearly teaches that signal sources

that are too distant fail to surpass input thresholds (col. 3, lines 34-38). Accordingly, sources of audio - including persons involved in a conversation - that are too distant to surpass the thresholds of either microphones (11,12) may also represent an improper relative positioning of the microphones. Accordingly, of the control signals in either of such situations represent error signals. A recitation of the intended use of the claimed invention, such as a signal representing an 'error' condition, must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. As discussed above, it is respectfully submitted that the threshold based detection of Ruegg, in particular view of the threshold detection of Carlson, would have been able to determine a contextual 'error' condition.

On page 6, lines 25-27, the applicant has stated, "There is also a lack of motivation to incorporate Ruegg's directionality switching circuitry into the combination of Carlson and Andrea". The examiner respectfully disagrees. As noted above, the switch control circuitry of Ruegg would have provided the capability of automatically determining the presence of a desired sound source in a desired direction, resulting in the appropriate signal processing.

On page 7, lines 15-21, the applicant has noted the rejection of the other claims, stating that such rejections do not overcome deficiencies of the rejection of parent claims involving Carlson in

view of Andrea and Ruegg. As such alleged deficiencies have been addressed and refuted in the above responses, the rejection of these other claims has also been reviewed, determined proper, and hereby maintained.

It is further noted that the applicant "requests that the Examiner enter the amendments and consider the Remarks presented herein" on page 1 of the submitted response. However, no such amendment has been submitted with the response and thus cannot be entered.

AG

SINH TRAN
SUPERVISORY PATENT EXAMINER